

ROBOTICS CLUB

Report on

***TWO DAY WORKSHOP ON “ROBOTIC APPLICATIONS FOR INTER
DISCIPLINARY ENVIRONMENT” 25th & 26th NOV 2022.***

Date: 28/12/2022

**Number of Participants:: TRS Members 27 , Other college students: 15 members, 39
Members from other Departments of NECN**

Total participants:: 81

A “TWO DAY WORKSHOP ON “ROBOTIC APPLICATIONS FOR INTER DISCIPLINARY ENVIRONMENT” is conducted by The Robotics Society of India (TRS) Student chapter of Narayana Engineering College: Nellore sponsored by The Robotics Society of India (TRS) on 25/11/2022 & 26/11/2022 .The Chief Guest for the inaugural program is Dr.T.Asokan, Professor, Department of Engineering Design, IIT Madras and Secretary, RSI; Guest of Honor, Mr. Parvez Hussian, Technical Manager, IIClub, Hyderabad; Special guest Sri. Mohammad Nawaz, Senior Product Manager (Robotics), Crayon Data, Chennai.

Main Objective of the Workshop

- To provide deep insight into Robotics building blocks.
- To develop Robot assembly & testing skills
- To explore the available sensors for Robotics
- To bridge the gap by providing an opportunity to the participants, so that they can write robotics programs to interface different types of input/output devices with the Microcontroller to do different projects.
- To work on Arduino kit, understand the robot configuration and subsystems

ProgramSchedule

DATE / DAY	FORENOON			AFTERNOON	
25.11.2022 Friday	Inaugural Program (10.00AM-10.45AM)	TEA BREAK	SESSION – 1 11.00am to 12.40pm	SESSION – 2 1-30 PM-3-00PM	SESSION – 3 3-15PM-4-45PM (ONLINE MODE)
	Chief guest: Dr. T. ASOKAN, Professor, Dept. of Engineering Design, IIT Madras and Secretary of THE ROBOTICS SOCIETY. Guest of Honour Mr.Sd.Purvez Hussian Founder, II Club- Robotics, Hyd. Special Guest: Mr.Mohammad Nawaz, Sr.Product Manager, Crayon Data,		Introduction to Robotics and Applications ,Artificial Intelligence Sri.Mohammad Nawaz Senior Product Manager (Robotics),Crayon Data, Chennai	Robot Components, Sensors & Actuators Mr. Sd. Parvez Hussain Technical Manager.II Club, Hyderabad	Laws Of Robotics, Anatomy Of Robot, Physical Configuration Dr. V. Veeranna Professor
26.11.2020 Saturday	SESSION – 4 9.30 AM-11-00AM	TEA BREAK	SESSION – 5 11.15AM to 12.45PM	SESSION – 6 1-30 PM-3-00PM	SESSION-7: 3-15PM-4- 30PM VALEDICTORY PROGRAM (4-30 PM TO 5PM)
	Kinematics of serial manipulators Dr.Thiyagarajan,Asst.Prof, IIT,TIRUPATI		Under water Robot, Design and control challenges Dr.Thiyagarajan,Asst.Prof,IIT TIRUPATI	Robot Components & Assembly, Robotic Softwares Mr. G.Sai nagarjuna Reddy, Senior Robotics Design Engineer, VOOT.COM.	Demonstration Of Humanoid Robotand Robotic ARM Mr. Sd. Parvez Hussain Technical Manager II Club, Hyderabad

Day1

Time:10.00-10.45 AM

Inaugural Session:

The event was formally inaugurated by lighting the lamp in the presence of Chief Guest Dr.T.Asokan, Professor, Dept. of Engineering Design, IIT, MADRAS; Guest of Honour, Mr. Parvez Hussian, Technical Manager, IIclub, Hyderabad, Special Guest Sri. Mohammad Nawaz, Senior Product Manager (Robotics), Crayon Data, Chennai ,Principal of Narayana Engineering college, Nellore ,Dr.G.Srinivasulu, Staff Coordinator of TRS student chapter Dr.A.V.S.Sridhar Kumar, HOD of CSE Dept. of NECN Dr.C.Rajendra. HOD ECE Dr. K.Murali, Co-Coordinator of NECN I.V.S.Yeswanth

The program is attended by HOD's and staff of all Departments, students and club members of The Robotics Society of India. Dr.A.V.S.Sridhar Kumar, HOD of Mechanical Department welcomed the gathering. The inaugural speech was given by the Dr.T.Asokan, stating the need of students learning Robotics and encouraged the students to become the members of The Robotics Society of India (RSI). He also encouraged the students to participate in various workshops, conferences, competitions organized by The Robotics Society of India. Dr.G.Srinivasulu Reddy Principal of our college motivated the students to utilize the opportunity of this workshop and gain the knowledge on Robotics and encouraged students to do more projects on Robotics.



Fig: Inauguration of Two day workshop by Chief Guest Dr.T.Asokan, and other Dignitaries

Dr.T.Asokan, Professor, Engineering Design, IITMadras addressing the gathering

Session1:11.00AM to 12.40PM

Topics: Introduction to Robotics and Applications, Artificial Intelligence

Resource Person: Sri. Mohammad Nawaz, Senior Product Manager (Robotics),Crayon Data,Chennai

As a part of Two day workshop on “Robotic Applications for Inter Disciplinary Environment” the first session is handled by Sri.Mohammad Nawaz Senior product manager, Crayon Data, Chennai.

The session mainly focused on introducing Robotics and AI to the students. Sri. Mohammad Nawaz said “Robotics is an interdisciplinary branch of computer science and engineering. Robotics involves design, construction, operation, and use of robots. The goal of robotics isto design machines that can help and assist humans”. He also discussed the role played by AI in future. He also discussed various application of Robotics and AI and elaborated the pros and cons of using Robotics Technology in day to day life



Fig: Sri.Md.Nawaz givinglectureonIntroductiontoRobotics and ArtificialIntelligence



Glimpse of Day1:Session 1

Session2: 1.30PM to 3.00PM

Topics: Robot Components, Sensors & Actuators

Resource Person: Mr.Sd. Parvez Hussain Technical Manager. IIClub, Hyderabad

In continuation to session 1 the session 2 is handled by Mr.Sd.Parvez Hussain, Technical Manager. II Club, Hyderabad. He has discussed various Robot components like body/frame, control system, manipulators, and drive train. He explained in detail about each component and how to integrate robot components with the control system. He also discussed about various sensor used in robots and how to use them on Robot system. Various types of sensor are explained by Sri. Sd. Parvez Hussian is

1. **Force and Touch sensors**
2. **Sensors used to detect the environment** like Temperature, Light, Sound, Chemical
3. **Object proximity sensor** like Infrared sensors, Ultrasonic distance sensors.



Fig: Sri SD. Purvez Hussian introducing Robot Components, sensor and Actuators with the help of Humanoid Robot as example



Fig: Sri SD. Parvez Hussian introducing Robot Components, sensor and Actuators with the help of Humanoid robot as example

Session3: 3.15PM to 4.45PM

Topics: Laws Of Robotics, Anatomy Of Robot, Physical Configuration

Resource Person: Dr.V. Veeranna, Professor & Principal, St ANNS COLLEGE OF ENGINEERING, YEMIGANURU, KURNOOL, AP

The 3rd session was handled by Dr.V. Veeranna, Professor through online mode. The session focused on: Laws of Robotics, Anatomy of Robot, and Physical Configuration. The Asimov laws of robotics are explained to the students. The anatomy of six degree freedom of Robotics discussed and Later various Robotics configurations like Cartesian, cylindrical, spherical configurations were discussed by the speaker.

IsaacAsimov's"ThreeLawsofRobotics"

1. A Robot may not injure a human being or, through in action, allow a human being to come to harm.
2. A Robot must obey orders given it by human beings except where such orders would conflict with the First Law.
3. A Robot must protect its own existence as long as such protection does not conflict with the First or Second Law.

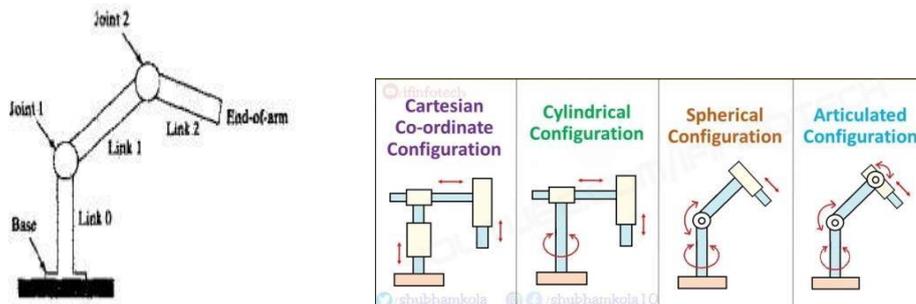


Fig: Robot Anatomy and configurations

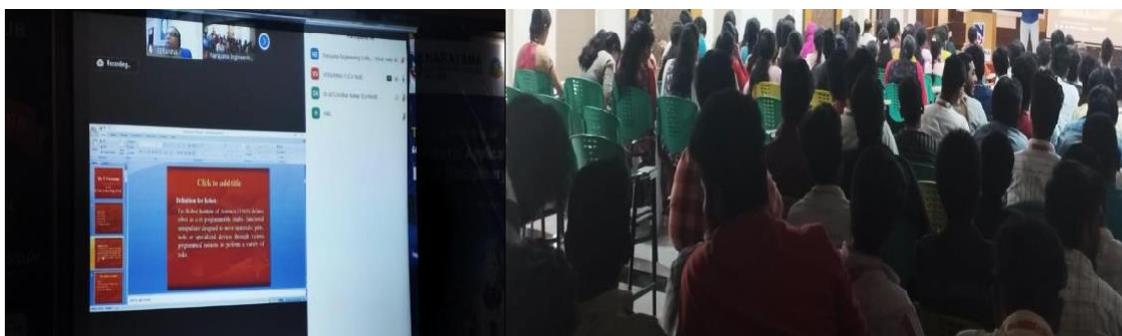


Fig: Dr.Veeranna, Professor, describing the basics of Robotic Configurations

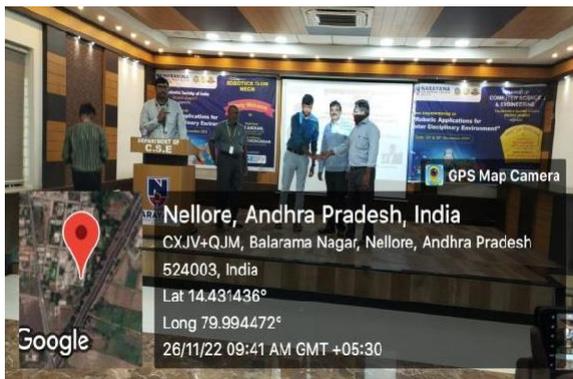
Day2:

Session4: 9.30AM- 11-00AM

Topics: Kinematics of serial manipulators

Resource Person: Dr.Thiyagarajan, Asst. Prof, Dept. of Mechanical Engg. IIT,TIRUPATI

This session started with Dr. Thiyagrajan giving lecture on kinematics of Serial Manipulators. The session mainly focused on discussing about serial and parallel manipulators.



Glimpse of Day2: Session4 and Session5 by Dr.R.Thiyagarajan Sir.

Session5: 11.15AM to 12.45PM

Topics: Under water Robot, Design and control challenges

Resource Person: Dr.Thiyagarajan, Asst.Prof, IIT, TIRUPATI

The 2ndDay Session of the Two day workshop is continued by Dr.Thiyagarajan, The session focused on exiting lecture given by the resource person on underwater Robotics and Control challenges. The students are very excited to hear the wonderful lecture delivered by the resource person on the recent advances in Robotics.



Glimpse of Day2: 4th Session and 5th Session, Students with the Resource person Dr.R.Thiygarajan, Assitant Professor, Department of Mechanical Engineering, IIT Tirupati

Session 6: 1.30PM - 3.00PM

Topics: Robot Components & Assembly, Robotic Software

Resource Person: Mr. G.Sai Nagarjuna Reddy, Senior Robotics Design Engineer,VOOT.COM

The day-2, session 6th was taken by Mr. G. Sai Nagarjuna Reddy, Senior Robotics Design Engineer, VOOT.COM. He has given a detailed presentation on how to assemble various components on the Robot and what are the different software that are available for coding the Robots.



Fig: Sri. G. Sai Nagarjuna Reddy, Senior Robotics Design Engineer, VOOT.COM, explaining the assembly of Robot components by demonstrating with the help of six degree freedom Robotic arm.

Session 7: 3.15PM-4.30PM

Topics: Demonstration of Humanoid Robot and Robotic ARM

Resource Person: Mr.Sd.Purvez Hussain, Technical Manager IIClub, Hyderabad

The last session of the two day workshop ended with Sri. Sd. Purvez Hussain, with practical demonstration of Humanoid Robot and Robotic Arm by displaying the working code for Humanoid Robot and Robotic Arm.

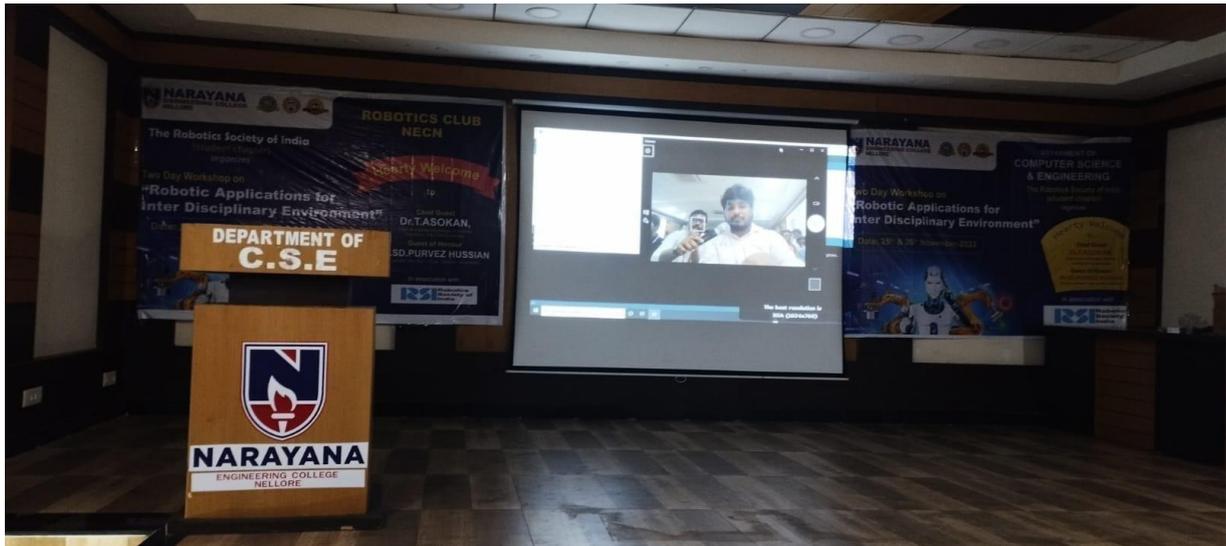


Fig: Sri.SD.Parvez Hussian Demonstrating the working of six degree freedom Robotic Arm and Humanoid Robot with coding.

Faculty Incharge

Convener.